

Remarks/Arguments

Applicants respectfully request further examination and reconsideration in view of the amendments made above and the comments set forth below. Claims 1-45, 47-52, and 59-71 were pending. Claims 46 and 53-58 were previously canceled. Within the previous Office Action, Claim 1 has been objected to for insufficient antecedent basis, Claims 1-45, 47-52, and 59-69 have been rejected under 35 U.S.C. § 103(a), Claims 16 and 40 have been objected to and Claims 70 and 71 have been allowed. By way of the amendments made above, Claims 1-4, 14-19, 25-27, 30, 36, 37, 40-42, 48, 59, 62, and 64-69 have been amended. Accordingly, Claims 1-45, 47-52 and 59-71 are pending.

The Applicants' attorney would like to thank Examiner Sandoval for her time and courteousness during a telephone interview on February 8, 2008. During this interview the above amendments to the claims were discussed in light of the teachings of the cited references, and particularly Sarfati.

Objection to Claim 1

Within the previous Office Action, it is stated that there is insufficient antecedent basis in Claim 1 for the limitation "the data accessed." By way of the above amendments, Claim 1 has been amended to remove this limitation. Accordingly, the objection to Claim 1 is now moot.

Rejections under 35 U.S.C. § 103(a)

Claims 1-45, 47-52 and 59-69

Within the previous Office Action, Claims 1-45, 47-52 and 59-69 have been rejected under 35 U.S.C. § 103(a) as being unpatentable over U.S. Patent No. 5,029,206 to Marino, Jr. et al. ("Marino") in view of U.S. Patent No. 6,938,166 to Sarfati et al. ("Sarfati"). The Applicants respectfully disagree.

Marino is directed to a "security kernel of a secure processing system for providing security management, key management and kernel security functions." (Marino, Abstract) The security kernel disclosed in Marino performs high-level functions such as using an application-layer protocol to generate traffic encryption keys (Marino, col. 4, lines 35-38), parsing, building, and sending messages (id., col. 4, lines 57-62 and 65-67), and providing negotiations to allow the determination of security attributes associated with a particular traffic encryption key (id., col. 5, lines 3-6). The term "kernel," as used in Marino, indicates that Marino's "kernel system" is a

central or essential part of its security system. Marino uses the term “kernel” differently than “kernel” is used in the present invention. Furthermore, as established Marino does not disclose using an encrypted directory.

Sarfati is directed to downloading of data to an MPEG receiver/decoder, where the data is composed of individual modules. To manage these modules, Sarfati discloses a directory table 40, as illustrated in Figure 8. The directory table 40 includes a directory part 42 and an encrypted signature 46 for the entire directory table. The directory part 42 includes, for each module, a module name 50, a module extension 34, and a module signature 52. As Sarfati discloses in its Figure 9, the encrypted signature 46 is generated by encrypting a first byte (56), dummy data (58 and 66), an application validation bitmap (60), a signature (64), and reserved data (62). The directory itself is not encrypted.

Sarfati further teaches “generating a directory signature for the directory; encrypting the directory signature using a private key; formatting the directory and the encrypted directory signature as a directory MPEG table; transmitting the directory and module MPEG tables . . .” (Sarfati, col. 6, lines 13-17) Accordingly, Sarfati draws a clear distinction between the directory signature, which is encrypted, and the directory itself, which is not encrypted. As described herein, Sarfati does not teach encrypting the directory itself. Sarfati teaches encrypting only the directory signature.

The independent Claim 1 is directed to a computer system comprising a memory portion containing an encrypted data file and an operating system comprising a kernel. It is specified in Claim 1 that the kernel is configured to decrypt an encrypted directory entry to determine a location of the encrypted data file and to decrypt the encrypted data file to access data contained therein. As explained above, neither Marino nor Sarfati, either alone or in combination, discloses a kernel configured to decrypt an encrypted directory entry to determine a location of an encrypted data file and to decrypt the encrypted data file to access data contained therein, as recited in Claim 1. For at least these reasons, the independent Claim 1 is allowable over Marino, Sarfati, and their combination.

Claims 2-25 and 59-63 are all dependent on the independent Claim 1. As described above, the independent Claim 1 is allowable over Marino, Sarfati, and their combination. Accordingly, Claims 2-25 and 59-63 are all also allowable as depending on an allowable base claim.

The independent Claim 26 is directed to a computer system comprising a first device and a second device coupled to the first device and configured to exchange cipher data with the first

device. It is specified in Claim 26 that the first device has an operating system kernel and a directory structure with directory information comprising encrypted data file names and corresponding encrypted data file locations for accessing encrypted data files within a file system, the operating system kernel configured to decrypt the encrypted data file names and encrypted data file locations using one or more encryption keys to recover clear data corresponding to the data file names, data file locations, and data files, the operating system kernel further configured to encrypt the clear data using the one or more encryption keys to generate cipher data corresponding to the directory information and encrypted data files. Neither Marino nor Sarfati, either alone or in combination, disclose a first device having an operating system kernel and a directory structure with directory information comprising encrypted data file names and corresponding encrypted data file locations for accessing encrypted data files within a file system, the operating system kernel configured to decrypt the encrypted data file names and encrypted data file locations using one or more encryption keys to recover clear data corresponding to the data file names, data file locations, and data files, the operating system kernel further configured to encrypt the clear data using the one or more encryption keys to generate cipher data corresponding to the directory information and encrypted data files, as recited in Claim 26. For at least these reasons, the independent Claim 26 is allowable over Marino, Sarfati, and their combination.

Claims 27-35 and 63-65 are all dependent on the independent Claim 26. As described above, the independent Claim 26 is allowable over Marino, Sarfati, and their combination. Accordingly, Claims 27-35 and 63-65 are all also allowable as depending on an allowable base claim.

The independent Claim 36 is directed to a method of storing an encrypted data file in a computer file system having a directory. The method of Claim 36 comprises receiving a clear data file having a name and executing kernel code in an operating system, the kernel code configured to encrypt the clear data file to generate an encrypted data file using a symmetric key, store the encrypted data file at a location in the computer file system, and store in the directory an entry containing an encryption of the name and an encryption of the location. Neither Marino nor Sarfati, either alone or in combination, discloses executing kernel code in an operating system to encrypt a clear data file having a name to generate an encrypted data file using a symmetric key, store the encrypted data file at a location in a computer file system, and store in a

directory in the computer file system an entry containing an encryption of the name and an encryption of the location, as recited in Claim 36. For at least these reasons, the independent Claim 36 is allowable over Marino, Sarfati, and their combination.

Claims 37-45, 47, 66 and 67 are all dependent on the independent Claim 36. As described above, the independent Claim 36 is allowable over Marino, Sarfati, and their combination. Accordingly, Claims 37-45, 47, 66 and 67 are all also allowable as depending on an allowable base claim.

The independent Claim 48 is directed to a computer system comprising a processor, a physical memory, a secondary device coupled to the physical memory, and an operating system. It is specified in Claim 48 that the physical memory contains an encrypted data file and a directory, wherein the directory comprises a record having a first element corresponding to an encrypted name of the data file and a second element corresponding to an encrypted location of the data file in the memory. It is further specified in Claim 48 that the operating system comprises a kernel that is configured to decrypt the first and second elements to access the encrypted data file from memory when transferring the data file from the memory to the secondary device and to re-encrypt the first and second elements when transferring the data file from the secondary device to the memory. Neither Marino nor Sarfati, either alone or in combination, disclose a directory that comprises a record having a first element corresponding to an encrypted name of a data file and a second element corresponding to an encrypted location of the data file in a memory, as recited in Claim 48. Furthermore, neither Marino nor Sarfati, either alone or in combination, disclose an operating system comprising a kernel that is configured to decrypt the first and second elements to access the encrypted data file from memory when transferring the data file from the memory to the secondary device and to re-encrypt the first and second elements when transferring the data file from the secondary device to the memory, as also recited in Claim 48. For at least these reasons, the independent Claim 48 is allowable over Marino, Sarfati, and their combination.

Claims 49-52, 68 and 69 are all dependent on the independent Claim 48. As described above, the independent Claim 48 is allowable over Marino, Sarfati, and their combination. Accordingly, Claims 49-52, 68 and 69 are all also allowable as depending on an allowable base claim.

Claims 4-7, 9, 11, 14, 15, 17, 18, 27-29, 36-39, 41, and 49-51

Within the previous Office Action, Claims 4-7, 9, 11, 14, 15, 17, 18, 27-29, 36-39, 41, and 49-51 have been rejected under 35 U.S.C. § 103(a) as being unpatentable over Marino in view of Sarfati and further in view of U.S. Patent Pub. No. 2003/0005300 to Noble et al. (“Noble”). The Applicants respectfully disagree.

Marino and Sarfati have been characterized above. Noble is directed to using a token that contains keys used to decrypt data when the token is within a predetermined range of a laptop and to encrypt data when outside that range. (Noble, Abstract) Noble does not teach using an encrypted directory. Specifically, like Marino and Sarfati, Noble also does not disclose an operating system kernel configured to decrypt an encrypted directory entry to determine a location of the encrypted data file and to decrypt the encrypted data file to access data contained therein.

Claims 4-7, 9, 11, 14, 15, 17, and 18 are all dependent on the independent Claim 1. As described above, the independent Claim 1 is allowable over Marino, Sarfati, and their combination. Accordingly, Claims 4-7, 9, 11, 14, 15, 17, and 18 are all also allowable as depending on an allowable base claim.

Claims 27-29 are all dependent on the independent Claim 26. As described above, the independent Claim 26 is allowable over Marino, Sarfati, and their combination. Accordingly, Claims 27-29 are all also allowable as depending on an allowable base claim.

Like Marino and Sarfati, Noble also does not disclose executing kernel code in an operating system to encrypt a clear data file having a name to generate an encrypted data file using a symmetric key, store the encrypted data file at a location in a computer file system, and store in a directory in the computer file system an entry containing an encryption of the name and an encryption of the location, as recited in the independent Claim 36. For at least these reasons, the independent Claim 36 is allowable over Marino, Sarfati, Noble, and their combination.

Claims 37-39 and 41 are all dependent on the independent Claim 36. As described above, the independent Claim 36 is allowable over Marino, Sarfati, Noble, and their combination. Accordingly, Claims 37-39 and 41 are all also allowable as depending on an allowable base claim.

Claims 49-51 are all dependent on the independent Claim 48. As described above, the independent Claim 48 is allowable over Marino, Sarfati, Noble, and their combination. Accordingly, Claims 49-51 are all also allowable as depending on an allowable base claim.

Claims 8, 10, and 30

Within the previous Office Action, Claims 8, 10, and 30 have been rejected under 35 U.S.C. § 103(a) as being unpatentable over Marino and Noble in view of U.S. Patent No. 5,903,881 to Schrader et al. (“Schrader”). The Applicants respectfully disagree.

Claims 8 and 10 are both dependent on the independent Claim 1. As described above, the independent Claim 1 is allowable over Marino, Sarfati, and their combination. Accordingly, Claims 8 and 10 are both also allowable as depending on an allowable base claim.

Claim 30 is dependent on the independent Claim 26. As described above, the independent Claim 26 is allowable over Marino, Sarfati, and their combination. Accordingly, Claim 30 is also allowable as depending on an allowable base claim.

Claims 12, 13, and 52

Within the previous Office Action, Claims 12, 13, and 52 have been rejected under 35 U.S.C. § 103(a) as being unpatentable over Marino and Noble and further in view of U.S. Patent No. 5,727,206 to Fish et al. (“Fish”). The Applicants respectfully disagree.

Claims 12 and 13 are both dependent on the independent Claim 1. As described above, the independent Claim 1 is allowable over Marino, Sarfati, and their combination. Accordingly, Claims 12 and 13 are both also allowable as depending on allowable base claim.

Claim 52 is dependent on the independent Claim 48. As described above, the independent Claim 48 is allowable over Marino, Sarfati, and their combination. Accordingly, Claim 52 is also allowable as depending on allowable base claim.

Claims 19, 21, 32, and 44

Within the previous Office Action, Claims 19, 21, 32, and 44 have been rejected under 35 U.S.C. § 103(a) as being unpatentable over Marino and Noble and further in view of U.S. Patent No. 6,836,888 to Basu et al. (“Basu”). The Applicants respectfully disagree.

Claims 19 and 21 are both dependent on the independent Claim 1. As described above, the independent Claim 1 is allowable over Marino, Sarfati, and their combination. Accordingly, Claims 19 and 21 are both also allowable as depending on allowable base claim.

Claim 32 is dependent on the independent Claim 26. As described above, the independent Claim 26 is allowable over Marino, Sarfati, and their combination. Accordingly, Claim 32 is also allowable as depending on an allowable base claim.

Claim 44 is dependent on the independent Claim 36. As described above, the independent Claim 36 is allowable over Marino, Sarfati, and their combination. Accordingly, Claim 44 is also allowable as depending on an allowable base claim.

Claims 20, 31, and 43

Within the previous Office Action, Claims 20, 31, and 43 have been rejected under 35 U.S.C. § 103(a) as being unpatentable over Marino and Noble and further in view of U.S. Patent No. 5,729,710 to Magee et al. (“Magee”). The Applicants respectfully disagree.

Claim 20 is dependent on the independent Claim 1. As described above, the independent Claim 1 is allowable over Marino, Sarfati, and their combination. Accordingly, Claim 20 is also allowable as depending on an allowable base claim.

Claim 31 is dependent on the independent Claim 26. As described above, the independent Claim 26 is allowable over Marino, Sarfati, and their combination. Accordingly, Claim 31 is also allowable as depending on an allowable base claim.

Claim 43 is dependent on the independent Claim 36. As described above, the independent Claim 36 is allowable over Marino, Sarfati, and their combination. Accordingly, Claim 43 is also allowable as depending on an allowable base claim.

Claims 22-24, 33-35, 45, and 47

Within the previous Office Action, Claims 22-24, 33-35, 45, and 47 have been rejected under 35 U.S.C. § 103(a) as being unpatentable over Marino and Noble and further in view of U.S. Patent No. 6,477,545 to LaRue (“LaRue”). The Applicants respectfully disagree.

Claims 22-24 are all dependent on the independent Claim 1. As described above, the independent Claim 1 is allowable over Marino, Sarfati, and their combination. Accordingly, Claims 22-24 are all also allowable as depending on an allowable base claim.

Claims 33-35 are all dependent on the independent Claim 26. As described above, the independent Claim 26 is allowable over Marino, Sarfati, and their combination. Accordingly, Claims 33-35 are all also allowable as depending on an allowable base claim.

Claims 45 and 47 are both dependent on the independent Claim 36. As described above, the independent Claim 36 is allowable over Marino, Sarfati, and their combination. Accordingly, Claims 45 and 47 are both also allowable as depending on an allowable base claim.

Claim 25

Within the previous Office Action, Claim 25 has been rejected under 35 U.S.C. § 103(a) as being unpatentable over Marino and Noble and further in view of U.S. Patent Pub. No. 2002/0065876 to Chien et al. ("Chien"). The Applicants respectfully disagree.

Claim 25 is dependent on the independent Claim 1. As described above, the independent Claim 1 is allowable over Marino, Sarfati, and their combination. Accordingly, Claim 25 is also allowable as depending on an allowable base claim.

Allowable Subject Matter

Within the previous Office action, it is stated that Claims 16 and 40 are objected to as being dependent on a rejected base claim, but would be allowable if rewritten in independent form to include all of the limitations of the base claim and any intervening claims.

As explained above, the independent Claims 1 and 36 are both allowable over Marino, Sarfati and their combination. Claims 16 and 40 are dependent on the independent Claims 1 and 36, respectively. Accordingly, Claims 16 and 40 are both also allowable as depending on an allowable base claim.

Within the previous Office action, it is also stated that claims 70 and 71 are allowed.

CONCLUSION

For the reasons given above, the Applicants respectfully submit that Claims 1-45, 47-52 and 59-71 are in condition for allowance, and allowance at an early date would be appreciated. If the Examiner has any questions or comments, the Examiner is encouraged to call the undersigned at (408) 530-9700 so that any outstanding issues can be quickly and efficiently resolved.

Respectfully submitted,
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